SESSION BI

The Effects of Altitude on the Profitability, Productivity, and Technical Efficiency of Cacao Farms in Calinan and Marilog Districts, Davao City, Philippines

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Abstract

Altitude is one of many components that accounts for climatic variability, which affects the level of inputs and outputs of farmers. This study compared the profitability and technical efficiency of cacao farms situated in areas classified as low, medium, and high altitude in Calinan and Marilog Districts, Davao City, Philippines. Costs and returns were calculated across wet, dried, and mixed cacao bean classification following the Philippine Statistics Authority template. The results suggest that dried cacao bean production in low, medium, and high altitudes have positive but smaller net returns relative to wet cacao bean production in low and medium altitudes and mixed cacao bean production in medium altitude. Dried cacao beans from these areas were marginally less profitable compared to wet beans primarily due to low quality of dried beans as a result of limited drying facilities. The stochastic production function was also used to determine technical efficiency performance. Cost of chemical inputs is a positive and significant factor of production. Farms with high altitude were less technically efficient compared to farms with low and medium altitudes. Higher altitude entails lower temperature and humidity, and cacao farming can be more challenging under this condition. Also, input purchasing behavior of farmers is also affected as the cost of transport becomes expensive. Access to extension, modern technology, and postharvest facilities is also limited in high altitude regions. However, there is an opportunity for farmers in high altitudes to improve their profitability by focusing on producing quality products and accessing specialty market.